

An Eocene fossiliferous chert artefact from Beacon Island: first evidence of prehistoric occupation in the Houtman Abrolhos, Western Australia

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In the course of recent research into the survivors of the 1629 *Batavia* shipwreck, a significant and unusual stone artefact was found in faunal material excavated from Beacon Island (Marwick 1999). This prehistoric artefact is made from Eocene fossiliferous chert that probably derives from outcrops on the now-submerged continental shelf that were once quarried by Aboriginal stone tool makers (Glover *et al.* 1993: 41–42). The artefact, along with faunal material consisting of bird, fish and native and introduced mammal bones, was excavated in 1967 by a Western Australian Museum expedition led by Colin Jack-Hinton and is currently stored at the Western Australian Maritime Museum. This artefact is the first evidence of prehistoric Aboriginal occupation of the Houtman Abrolhos. It suggests that Aboriginal occupation of the Houtman Abrolhos pre-dates the isolation of the islands from the mainland and the submersion of the continental shelf at around 6 000 BP.

The Houtman Abrolhos are a group of 108 low-lying islands surrounded by extensive coral reefs located toward the edge of the continental shelf. They are about 500 km north of Fremantle and 65 km west of Geraldton, in the area 28°14'– 29°00'S, 113°35'– 114°04'E (figure 1). The islands were separated from the mainland by rising sea levels at 11 000 – 12 000 BP (Dortch and Morse 1984: 41, cf. Royal Australian Navy 1969). Archaeological surveys and excavations have been conducted in the Wallabi Group since 1963, the most recent being in 2001. The focus of most of the archaeological research in the Wallabi Group has been the submerged wreck of the *Batavia*. In addition to the underwater investigations, archaeologists have also conducted research into the location and character of the survivors' camps relating to the 1629 shipwreck of the *Batavia* (Gibbs 1992).

Beacon Island is in the Wallabi Group and is a 5.25 ha accumulation of coral rubble semi-consolidated into loose beach ridges (Bevaqua 1974, Green and Stanbury 1988). Following the *Batavia* shipwreck the majority of survivors initially congregated on Beacon Island. About four weeks after the shipwreck a mutiny broke out on Beacon

Island and about 125 people were massacred (Drake-Brockman 1963: 173). East and West Wallabi Islands, also in the Wallabi Group, are the two largest islands (360 ha and 600 ha) in the Houtman Abrolhos and have relictual continental surfaces of dunes and aeolian limestone with rich shrub vegetation and sinkholes of drinkable water (Storr 1965). East and West Wallabi Islands were home to about 47 soldiers and passengers for almost four months after the *Batavia* shipwreck until rescued by Pelsaert (Drake-Brockman 1963: 214–253).

Land based archaeological investigations into the *Batavia* shipwreck survivors have resulted in several surveys and excavations on West Wallabi Island and Beacon Island (Gibbs 1992). A five-day survey for prehistoric archaeological material on East and West Wallabi Islands found no indication of prehistoric Aboriginal occupation (Dortch and Morse 1985). Dortch and Morse (1985: 41) examined 'a variety of likely localities' on the two islands and were surprised at the absence of material. They were unwilling to conclude that the Houtman Abrolhos were unoccupied before European settlement and they wrote that it is 'likely that any finds there will consist of isolated stone artefacts like those from Rottnest and Garden Islands' (Dortch and Morse 1985: 41).

The artefact is a black Eocene fossiliferous chert flake with slight edge damage, a missing linear platform and a hinge termination (figure 2). Its dimensions are: 25.6 mm long by 28.1 mm wide by 4.0 mm thick. The artefact is translucent and unweathered, similar to other unweathered flakes found on Rottnest Island and excavated from Devil's Lair (Dortch 1984, Dortch 1991: figure 2.1, Hesp *et al.* 1999: figure 2.1, Dortch pers comm 1999). The raw material of the artefact indicates that it was procured and manufactured before around 6 000 BP when the Eocene fossiliferous chert outcrops on the outer edge of the continental shelf were submerged by glacio-eustatic sea level rise (Glover 1975, 1979, 1984: 17–18, Glover and Lee 1984: 16, Thom and Chappell 1975, Quilty 1978). Many hundreds of Eocene fossiliferous chert artefacts have been recorded at dozens of sites in the Perth

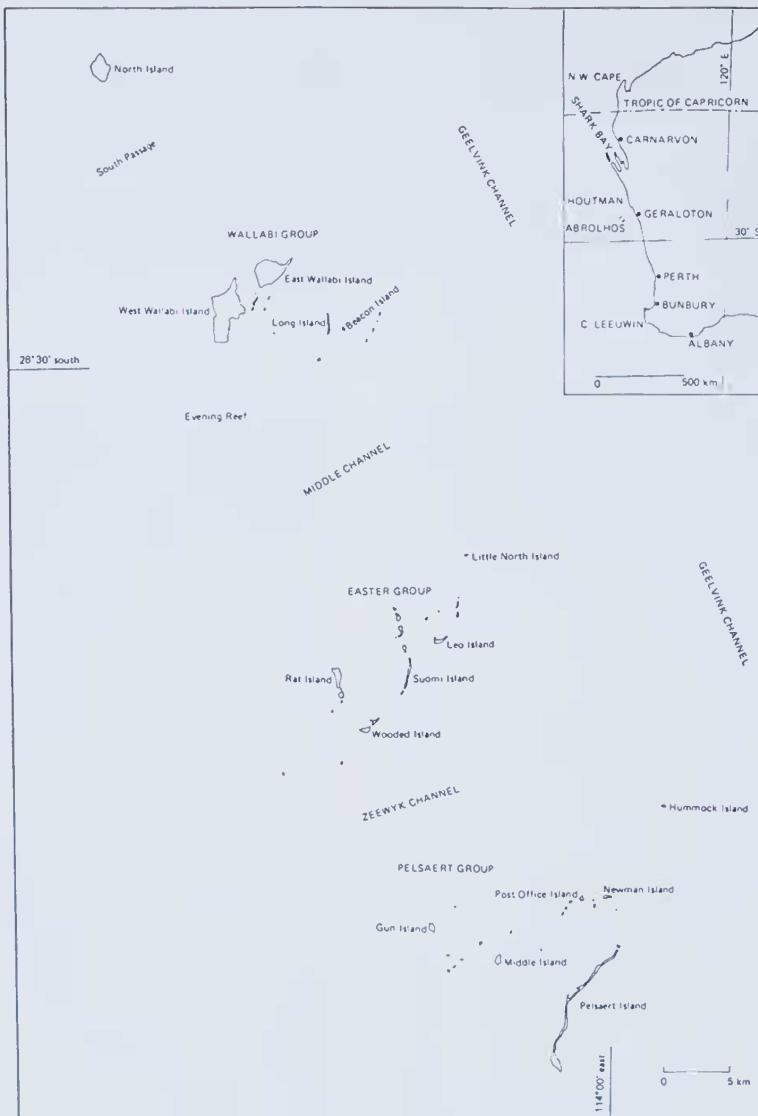


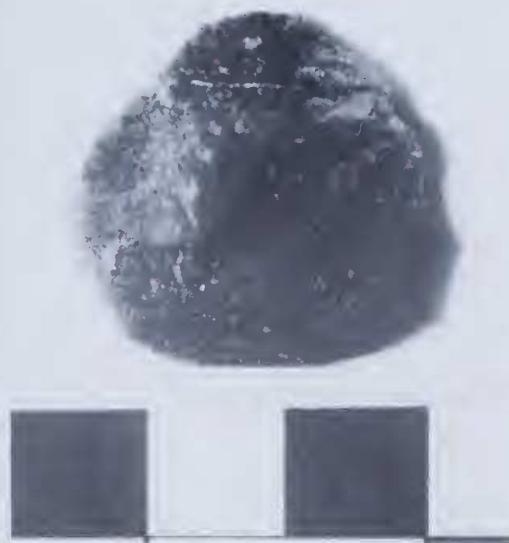
Figure 1 Map of Abrolhos Islands from Storr, Johnstone and Griffin (1986) detailing location of Beacon Island.

Basin, Leeuwin Block and Southern Ocean coast. Eocene fossiliferous chert artefacts first appear in archaeological sequences at more than c. 30 000 BP and then disappear during the Middle Holocene (Ferguson 1980, Glover 1984, Glover and Lee 1984, Glover *et al.* 1978, Pearce 1978).

It is unlikely that the artefact represents early European activity on the island. A firearm flint was recovered in Beavaqua's 1974 excavations, which is probably associated with the flintlock muskets used by the *Batavia* survivors during the mutiny (Beavaqua 1974). Firearm flints have a distinctive

wedge shape (Held 1970) that is quite different from the Beacon Island flake. The *Batavia* survivors may also have used tinderboxes for starting fires that include flints characteristic in morphology and raw material. The shape of the Beacon Island flake does not resemble a flint from a flintlock firearm or a tinderbox. Although flint pebbles were often used as ballast, historical records do not indicate that the *Batavia* ballast was salvaged and used by the survivors on the islands. European chert artefacts have been dumped with ballast in Australia (Dortch and Glover 1983, McCarthy 1958: 178). However,

a



b



Figure 2 (a) Dorsal surface of artefact (b) ventral surface of artefact. The scale is in centimetres.

the ballast materials of the *Batavia* can be ruled out as a possible flint source as they were mainly bricks (Godard 1993). There are no chert sources on the Abrolhos and the nearest source is either on the submerged continental shelf or over 80 kilometres to the north-east in the Carnarvon Basin (Glover 1975).

The artefact was recovered from the 1967 excavations at the north-east of Beacon Island in association with bird, fish and native and introduced mammal bones and fragments of Dutch ceramics, metal and glass. Unfortunately there are no extant records of the 1967 excavations except for the artefact accession labels. A tentative reconstruction of the excavations based on the accession numbers and details of subsequent excavations suggests that the artefact was recovered from a depth of 20–30 cm (Marwick 1999). The artefact's provenance at the time of recovery is of limited chronological or contextual significance because of the low stratigraphic integrity of the soil. The soil matrix is loose, sandy and frequently disturbed by the burrowing of animals, notably the seasonal nesting activity of the wedge-tailed Shearwater (Bevaqua 1974, Storr 1965, Storr *et al.* 1985).

Weathering from exposure on Beacon Island may result from the salt spray, sandblasting, high ground surface heat and bright sunlight. If the flake had been exposed to these conditions it would be deeply patinated, dehydrated, porous textured and partly desilicified, similar to other Eocene fossiliferous chert artefacts from open air sites in the south-west (Dortch 2000 Vol 2: 47). Given the

extreme weathering conditions on Beacon Island and the unweathered appearance of the artefact it is likely that the artefact remained buried for long periods.

The significance of this artefact is that it shows prehistoric Aboriginal occupation of offshore islands in an area and for a period where no previous evidence exists. Dortch and Morse (1985: 42) conclude from existing archaeological data that distant offshore islands in Western Australia were occupied in prehistoric times only when the sea levels were low and when the islands were readily accessed from the present mainland. This artefact confirms the conclusion of Dortch and Morse (1985: 42) and is evidence of prehistoric human activity on Beacon Island during the glacio-eustatic sea-levels rise between 11 000–12 000 BP and about 5 000 BP. (Dortch and Morse 1985: 41). Future research in the Houtman Abrolhos area may reveal patterns of prehistoric occupation and raw material use similar to other areas close to the outer edge continental shelf in Western Australia as described by Dortch and Morse (1985) and Bowdler (1995).

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